FETAL SURVEILLANCE

N124
MATERNAL CHILD NURSING

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ELECTRONIC FETAL MONITORING (EFM)

- What is it?
- Why do we use it?
- How does it work?
- What are the benefits/limitations?

EQUIPMENT

- Fetoscope

EQUIPMENT

- Doppler

EQUIPMENT

- Electronic Fetal Monitor

EFM EQUIPMENT

- External
  - Monitor
  - Tocotransducer
  - Ultrasound transducer
  - Belts Paper Gel

EFM EQUIPMENT

- Tocotransducer
  - Assess uterine activity - contractions
  - Assess changes in abdominal pressure

EFM EQUIPMENT

- Ultrasound Transducer
  - Assess movement and translate into rhythm
  - Assess fetal heart rate (FHR)

EFM EQUIPMENT

- Internal
  - Monitor
  - Intrauterine pressure catheter (IUPC)
  - Fetal Scalp Electrode (FSE)
  - Leg Plate Gel

EFM EQUIPMENT

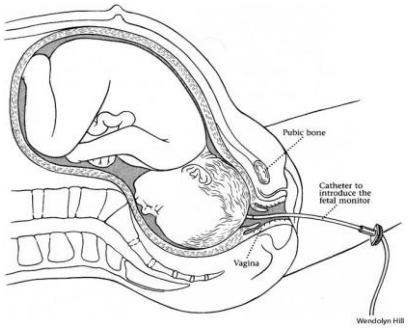
- Intrauterine pressure catheter (IUPC)
  - Assess uterine activity
  - Measures intensity/strength of uterine contractions (mmHg)

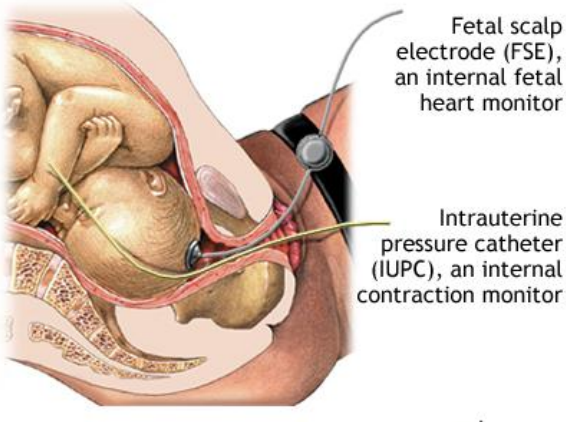
FETAL SCALP ELECTRODE (FSE)

- Assess fetal heart rate
- Actual ECG of fetus
- Assess for any changes in FHR
- More accurate information

FETAL SCALP ELECTRODE (FSE)

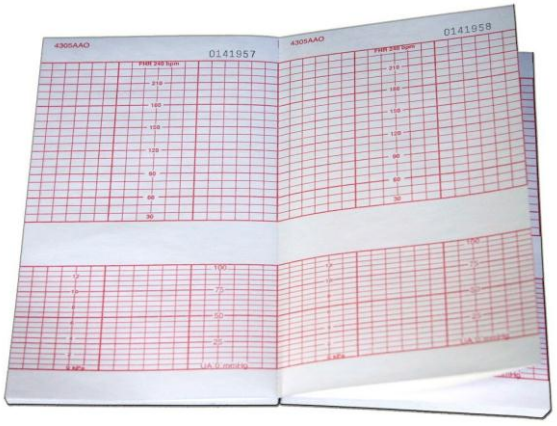
FSE PLACEMENT



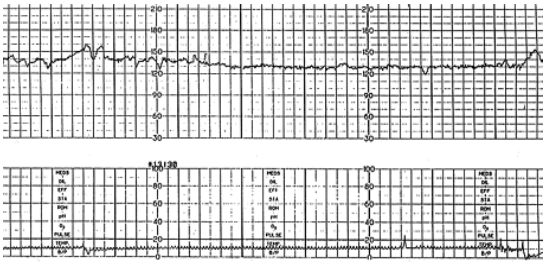


FETAL HEART RATE (FHR)

- Normal range - 110 to 160
- Baseline rate
  - Mean Average FHR between Ucs
  - Does not include accels and decels
- Periodic Pattern (changes)
  - Accelerations and decelerations
- Variability – overall changes in baseline



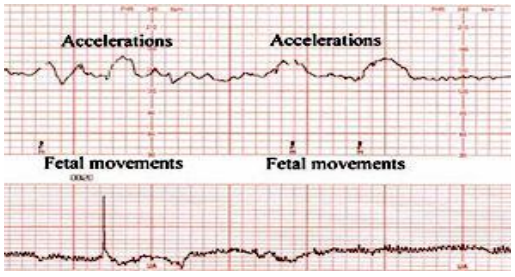
FHR TRACING



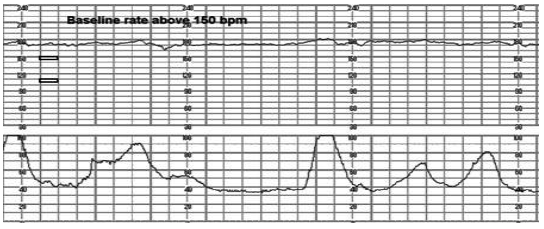
FHR CHANGES

- Periodic Pattern
  - Accelerations - increase in baseline rate by 15 bpm lasting 15 seconds (15 x 15)
  - Tachycardia - baseline rate > 160
  - Bradycardia – baseline rate < 110

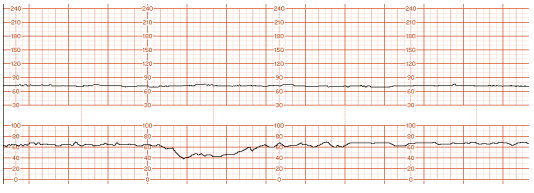
FETAL ACCELERATIONS



FETAL TACHYCARDIA



FETAL BRADYCARDIA

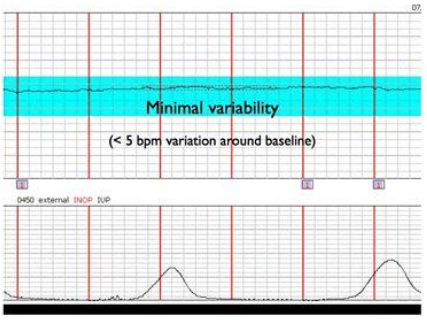


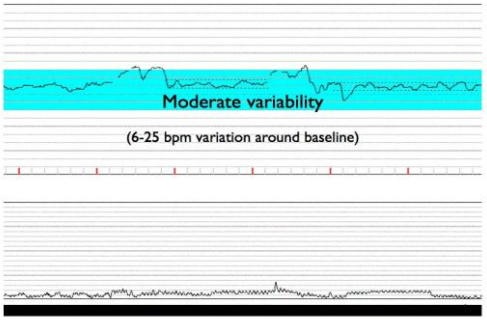
BASELINE VARIABILITY

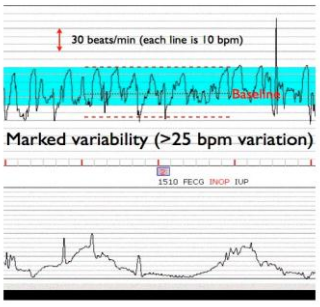
- Definition
  - Fluctuation in FHR indicating a functioning autonomic nervous system (ANS).
- Scale – using peak to trough amplitude

  Absent – undetectable Minimal – ≤ 5 bpm

  Moderate – 6 – 25 bpm Marked – > 25 bpm







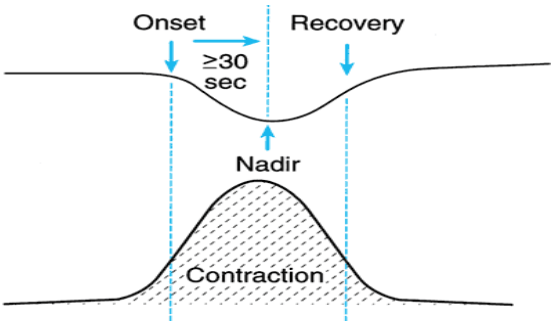
FHR - DEVIATIONS

- Decelerations
  - Decrease in fetal heart rate from baseline
    - Periodic or episodic
    - Abrupt or gradual
    - prolonged

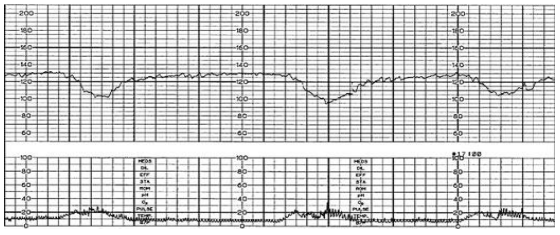
FHR - DEVIATIONS

- Decelerations
  - Early
    - caused by head compression
    - GRADUAL periodic deceleration occuring simultaneously with the contraction
    - Nadir occurs at the peak of the contraction

EARLY DECELERATION



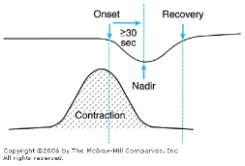
EARLY DECELERATIONS



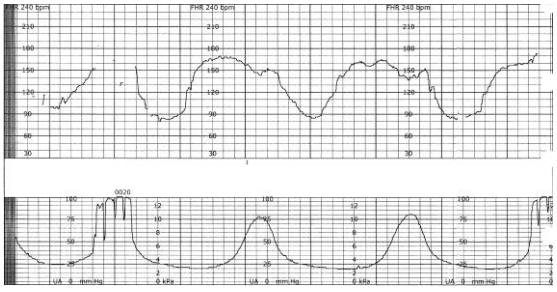
FHR - DEVIATIONS

- Decelerations
  - Late
    - caused by uteroplacental insufficiency
    - GRADUAL periodic decceleration occuring after the contraction has begun
    - Nadir always occurs after the peak of the contraction

LATE DECELERATION



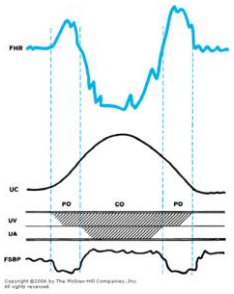
LATE DECELERATIONS

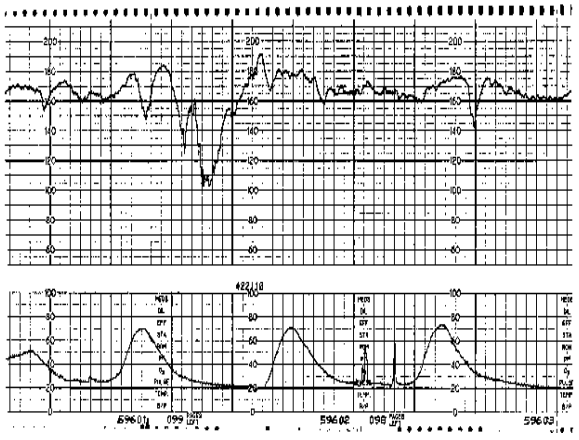


FHR - DEVIATIONS

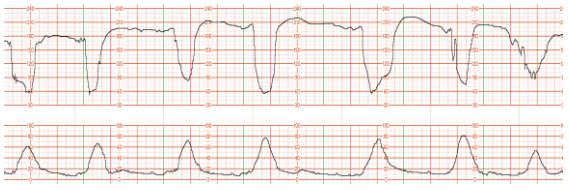
- Decelerations
  - Variable
    - caused by cord compression
    - ABRUPT decrease from baseline to nadir
    - 15 X 15
    - Shaped like a V, U, or W

VARIABLE DECELERATIONS





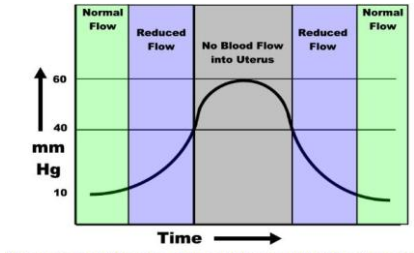
VARIABLE DECELERATIONS



UTERINE CONTRACTIONS (UC)

- Uterine contractions
  - Normal pattern is ≤ 5 UCs in 10 min
  - Tachysystole is > 5 UCs in 10 min
  - How to measure
    - Frequency – Duration – Intensity

UTERINE CONTRACTIONS (UC)



Change in Uterine Blood Flow with Contractions

QUESTION

- 1 – The normal fetal heart rate range is 120 – 160 according to the standardized NICHD terminology.
  - True
  - False

QUESTION

- 2 – Your patient is having late decelerations. What is your nursing care priority?
  - A. Call the physician.
  - B. Apply oxygen by mask.
  - C. Tell the patient to breath deeply.
  - D. Place the patient left side-lying.

QUESTION

- 3 – The nurse knows that early decelerations are caused by:
  - A. cord compression
  - B. head compression
  - C. uteroplacental insufficiency

QUESTION

- 4 – The nurse notices a pattern of spontaneous variable decelerations. She knows that these are caused by:
  - A. cord compression
  - B. head compression
  - C. uteroplacental insufficiency